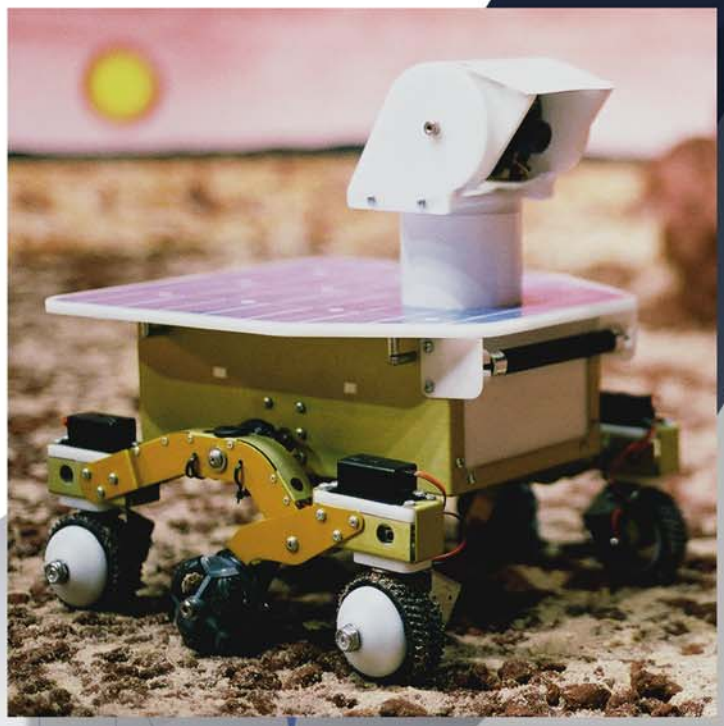
PER - Personal Exploration Rover

NASA Ames Research Center Computational Sciences Division

The Personal Exploration Rover (PER) is a miniature six-wheeled robot that gives visitors to Ames Research Center hands-on lessons in robotics and planetary exploration. The rover is among a fleet of 20 NASA-funded PERs that can be found in museums across the United States.



"With the Personal Exploration Rover, students can learn how robots interact with the world and see for themselves how the future might look as we have more and more robots helping us in our everyday life," said G. Scott Hubbard, director of NASA Ames Research Center.

Each rover is 1.2 feet tall, weighs 10 pounds and can move 1.6 inches per second across a Mars yard in the museum. A visitor interacts with a PER by selecting a rock target that the rover's panoramic imager displays on a monitor. Then the tiny vehicle moves across the red planet's simulated landscape to reach the rock. Each rover's mobility system is similar to the Mars Exploration Rover Mission's Spirit and Opportunity.

Designed to teach and to encourage the development of low-cost robotic devices for use in education and at home, the PER project was first developed by researchers at Carnegie Mellon University with support from NASA and Intel Corp. Ames robotics researcher Illah Nourbakhsh is an associate professor of robotics on leave at Carnegie Mellon University's School of Computer Science. Nourbakhsh led the PER project while at the school.

"Our goal is to excite and inspire kids about science and technology and educate people about the role of rovers and rover autonomy in doing space science," Nourbakhsh said. "We want people to understand why it's important for the rovers to be smart."

The PER project is funded as part of a four-year grant from NASA to develop educational robots. It is supported through the NASA Ames Intelligent Systems Program and Intel. The PERs are powered by Intel ® Xscale ® technology using the Intel ® PXA255 processors, which provide high system performance and low power consumption. The rovers run the Linux operating system and are programmed in Java.

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